ABSTRACT

The present invention is directed to methods for altering the fate of a cell, tissue or organ type by altering Notch pathway function in the cell. The invention is further directed to methods for altering the fate of a cell, tissue or organ type by simultaneously changing the activation state of the Notch pathway and one or more cell fate control gene pathways. The invention can be utilized for cells of any differentiation state. The resulting cells may be expanded and used in cell replacement therapy to repopulate lost cell populations and help in the regeneration of diseased and/or injured tissues. The resulting cell populations can also be made recombinant and used for gene therapy or as tissue/organ models for research. The invention is directed to methods for of treating macular degeneration comprising altering Notch pathway function in retinal pigment epithelium cells or retinal neuroepithelium or both tissues. The present invention is also directed to kits utilizing the methods of the invention to generate cells, tissues or organs of altered fates. The invention also provides methods for screening for agonists or antagonists of Notch or cell fate control gene pathway functions.